

中国拟裸蝗属分类研究及二新种记述 (鳞翅目:斑腿蝗科)

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摘要: 记述了我国拟裸蝗属 10 种, 其中有 2 新种, 即香格里拉拟裸蝗 *Conophymacris xianggelilaensis* sp. nov. 及九龙拟裸蝗 *Conophymacris jiulongensis* sp. nov., 附有分种检索表和种类分布。模式标本保存于陕西师范大学动物研究所及河北大学博物馆。

关键词: 直翅目; 斑腿蝗科; 拟裸蝗属; 分类; 新种

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A taxonomic study of the genus *Conophymacris* Willemse (Orthoptera: Catantopidae) from China, with descriptions of two new species

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Abstract: The genus *Conophymacris* Willemse from China was reviewed, with ten species recorded, including two new species: *Conophymacris xianggelilaensis* Niu et Zheng, sp. nov. and *Conophymacris jiulongensis* Zheng et Shi, sp. nov. A key to the species of *Conophymacris* from China is provided. Type specimens are kept in the Institute of Zoology, Shaanxi Normal University and Museum of Hebei University.

Key words: Orthoptera; Catantopidae; *Conophymacris*; taxonomy; new species

拟裸蝗属 *Conophymacris* 为 Willemse 1933 年建立 (Willemse, 1933), 属模式种 *Conophymacris chinensis*, 标本采自于云南昆明; 张光朔 (1937) 报道了 *C. szechwanensis*; 郑哲民 (1977, 1980) 报道了 *C. yunnanensis* 及 *C. viridis*; 毕道英和夏凯龄 (1984) 报道了 *C. conicerca*; 梁铭球 (1993) 报道了 *C. nigrofemora*; 王裕文 (1993) 报道了 *C. chuxiongensis*; 郑哲民, 和毛本勇 (1996) 报道了 *C. cangshanensis*, 至此共计有 8 种, 均分布于我国云南和四川地区。在整理近年来采自云南和四川等地标本时, 又发现 2 个新种, 模式标本保存于陕西师范大学动物研究所及河北大学博物馆。

拟裸蝗属 *Conophymacris* Willemse, 1933

Conophymacris Willemse, 1933, *Naturh. Maandblad* 22(2): 16; Bei-Bienko and Mistshenko, 1951, *Acridoidea of the USSR and Adjacent Countries*: 180; Mistshenko, 1952, *Fauna of the USSR*, IV(2), nov. ser. 54 (Catantopinae): 71, 201–203; Xia, 1958,

Synop. Classifi. Chinese Acridoidea: 45–46; Zheng, 1985, *Acridoidea from YGSSN Regions*: 152; Zheng, 1993, *Acritaxonomy*: 131; Li and Xia, 2006, *Fauna Sinica, Insecta* 43: 352.

模式种: *Conophymacris chinensis* Willemse, 1933

体中型, 通常具细刻点。头短, 颜面侧观略向后倾斜, 颜面隆起纵沟明显。复眼卵圆形, 较突出。触角丝状, 细长, 超过前胸背板后缘。前胸背板前缘平直, 后缘圆弧形, 中央微凹; 中隆线较高, 侧隆线明显, 直或在沟前区处略凹; 沟前区长度大于沟后区。前胸腹板突圆锥形, 顶端略尖; 后胸腹板侧叶明显分开。前翅较小, 鳞片状, 侧置, 在背部不相毗连, 翅顶圆形, 长度超过第 1 腹节背板后缘; 后翅极小, 不发达。后足股节匀称, 上侧中隆线平滑, 下膝侧片顶端圆形或圆角形突出; 后足胫节具外端刺。鼓膜器发达, 孔卵圆形。雄性腹部末节背板后缘无尾片。肛上板宽盾形, 端部圆角形突出。尾须较扁, 基部和端部较宽, 中部细或成锥形。下生殖板短锥形。阳具基背片折状, 桥部平直

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或拱形,具锚状突,冠突一对,其下缘中部翘起。 常具3个突起;上产卵瓣之上外缘不具细齿或具雌性肛上板长三角形;尾须短锥形;下生殖板后缘 钝齿。

中国拟裸蝗属分种检索表

- 1(2) 雌性下生殖板后缘中央凹入;前胸腹板突前后扁平。分布于云南(楚雄) 楚雄拟裸蝗 *C. chuxiongensis* Wang, 1993
- 2(1) 雌性下生殖板后缘中央三角形突出;前胸腹板突圆锥形
- 3(4) 雄性尾须锥状。分布于云南(保山) 锥尾拟裸蝗 *C. conicerca* Bi et Xia, 1984
- 4(3) 雄性尾须基部和端部扩宽
- 5(6) 后足胫节褐色。分布于云南(个旧、师宗、马关、文山) 云南拟裸蝗 *C. yunnanensis* Cheng, 1977
- 6(5) 后足胫节红色
- 7(8) 雄性尾须后下角内折。分布于云南(香格里拉) 香格里拉拟裸蝗 *C. xianggelilaensis* Niu et Zheng sp. nov.
- 8(7) 雄性尾须末端扁平,后下角不内折
- 9(12) 雄性尾须后下角锐角形
- 10(11) 后足股节内侧全黑色;雄性尾须后上角较尖,锐角形。分布于云南(丽江)、四川(盐源) 黑股拟裸蝗 *C. nigrofemura* Liang, 1993
- 11(10) 后足股节内侧大部为黑色,具明显淡色斑;雄性尾须后上角较钝,钝角形或圆形。分布于云南(大理苍山、宾川、剑川、洱源、大姚、永胜、丽江、香格里拉) 苍山拟裸蝗 *C. cangshanensis* Zheng et Mao, 1996
- 12(9) 雄性尾须后下角钝角形或圆形
- 13(16) 雄性尾须后缘弧形,后下角近圆弧形;雄性下生殖板顶钝
- 14(15) 雄性前胸背板侧隆线在沟前区略弯曲;后足股节内侧全黑色;后足胫节红色;雌性翅长为宽的1.6倍;雌性下生殖板后缘具三突起,中齿小。分布于云南(保山)、四川(昭觉) 绿拟裸蝗 *C. viridis* Zheng, 1980
- 15(14) 雄性前胸背板侧隆线在沟前区直;后足股节内侧大部为黑色,中部及端部具淡色斑;后足胫节端2/3红色,基1/3黑色,近基部具淡色环;雌性翅长为宽的1.25倍;雌性下生殖板后缘具三突起,中齿大。分布于四川(九龙) 九龙拟裸蝗 *C. jiulongensis* Zheng et Shi, sp. nov.
- 16(13) 雄性尾须后缘近平直,后下角近钝角形;雄性下生殖板顶尖
- 17(18) 触角较细长,中段一节的长度为宽度的3~4倍;体型较大,体长:♂27~31 mm,♀35~40 mm。分布于四川(峨眉山) 四川拟裸蝗 *C. szechwanensis* Chang, 1937
- 18(17) 触角较短粗,中段一节的长度为宽度的2~2.5倍;体型较小,体长:♂20~24 mm,♀25~29 mm。分布于云南(昆明、会泽、富民)、重庆 中华拟裸蝗 *C. chinensis* Willemse, 1933

Key to species of *Conophymacris* Willemse from China

- 1(2) Hind margin of subgenital plate of female concave in the middle; prosternal process relatively flattened in front and behind faces. Distribution in Yunnan (Chuxiong) *C. chuxiongensis* Wang, 1993
- 2(1) Hind margin of subgenital plate of female with a triangular process in the middle; prosternal process conical.
- 3(4) Cerci of male conical. Distribution in Yunnan (Baoshan) *C. conicerca* Bi et Xia, 1984
- 4(3) Cerci of male widened on basal and apical parts.
- 5(6) Hind tibia brown. Distribution in Yunnan (Gejiu, Shizong, Maguan and Wenshan) *C. yunnanensis* Cheng, 1977
- 6(5) Hind tibia red.
- 7(8) Cerci of male folded on lower margin of apex. Distribution in Yunnan (Xianggelila) *C. xianggelilaensis* Niu et Zheng, sp. nov.
- 8(7) Cerci of male flat on apex, postero-lower angle not folded.
- 9(12) Cerci of male postero-lower angle acutangular.
- 10(11) Inner side of hind femur black; postero-upper angle of male acutangular. Distribution in Yunnan (Lijiang), Sichuan (Yanyuan) *C. nigrofemura* Liang, 1993
- 11(10) Most part of inner side of hind femur black, with distinctly light band; postero-upper angle of male obtuse-angular or nearly round. Distribution in Yunnan (Dali, Binchuan, Jianchuan, Eryuan, Dayao, Yongsheng, Lijiang and Xianggelila) *C. cangshanensis* Zheng et Mao, 1996
- 12(9) Cerci of male postero-lower angle obtuse angular or nearly round.
- 13(16) Hind margin of cerci of male arc, postero-lower angle rounded; apex of subgenital plate of male obtused.
- 14(15) In male, lateral keels of pronotum slightly curved in prozona; inner side of hind femur black; hind tibia red; length of elytra of female 1.6 times its width; hind margin of subgenital plate of female with three teeth, middle one small. Distribution in Sichuan (Zhaoyue), Yunnan (Baoshan) *C. viridis* Zheng, 1980
- 15(14) In male, lateral keels of pronotum straight; most part of inner side of hind femur black, middle and apical part light; apical two-thirds of hind tibia red, basal one third black, near the basal part with light ring; length of elytra of female 1.25 times its width; hind margin of subgenital plate of female with three teeth, middle one large. Distribution in Sichuan (Jiulong). *C. jiulongensis* Zheng et Shi, sp. nov.

- 16(13) Hind margin of cerci of male straight, postero-lower angle obtuse angular; subgenital plate sharp.
- 17(18) Antennae long and slender, length of middle segment 3–4 times its width; size larger, length of body: ♂ 27–31 mm, ♀ 38–40 mm. Distribution in Sichuan (Emei Shan) *C. szechwanensis* Chang, 1937
- 18(17) Antennae short and thick, length of middle segment 2–2.5 times its width; size small, length of body: ♂ 20–24 mm, ♀ 25–29 mm. Distribution in Yunnan (Kunming, Huize, Fumin), Chongqing *C. chinensis* Willemse, 1933

新种记述

1 香格里拉拟裸蝗，新种 *Conophymacris xianggelilaensis* Niu et Zheng, sp. nov. (图 1~4)

雄性：体中型，粗壮。头短，缺头侧窝；颜面略倾斜，具粗大刻点，颜面隆起在中央单眼以上的纵沟明显，中央单眼以下不明显。复眼卵圆形，稍突出，复眼纵径为横径的 1.3 倍，为眼下沟长度的 1.5 倍。触角丝状，略超过前胸背板后缘，中段一节长为宽的 2 倍。前胸背板前缘平直，后缘弧形，中央微凹；中、侧隆线明显，沟前区长为沟后区长 1.4 倍。前胸腹板突圆锥形，顶端尖。前翅小，鳞片状，侧置，在背部不毗连，其长为宽的 1.7 倍；后翅甚微小。后足股节上侧中隆线平滑，下膝侧片顶端圆形。后足胫节外侧具刺 8~10 个，具外端刺，内侧具刺 10~11 个。鼓膜器发达，卵圆形。肛上板宽稍大于长，两侧的中部略凹入，后缘中央三角形突出。尾须较细长，基部最宽，中部狭，端部稍宽扁，端部后下角突出，内折。下生殖板短锥形，顶钝。

体褐色。颜面、颊、前胸背板侧片下半部色较浅，黄褐色。前翅褐色，臂脉域黄褐色。后足股节上侧绿色，外侧黑色，下半近端部具一黄色纵纹，下侧暗绿色，内侧几乎全黑色，仅下缘近基部具暗红色纵纹，中部具一小黄斑。胫节紫红色。

雌性：结构和体色与雄性相同。肛上板三角形。产卵瓣粗短，外缘无细齿。下生殖板后缘具三突起，均呈三角形，中央一个较细小。

体长：♂ 19.5~25 mm；♀ 25.5~29 mm
前胸背板长：♂ 5.8~6 mm；♀ 6.5~7.2 mm
前翅长：♂ 4~5 mm；♀ 4.5~5 mm
后足股节长：♂ 12~13 mm；♀ 13.5~14 mm
正模♂，云南：香格里拉（铺上），1998-09-13，3 000 m，欧晓红采；副模 30 ♂ 20 ♀，同正模。

该新种近似于黑股拟裸蝗 *Conophymacris nigrofemora* Liang, 1993，但雄性尾须后下角内折，肛上板长略大于宽，后足胫节内外侧刺较少；阳具基背片形状不同(图 4, 5)。

词源：新种名以模式产地“香格里拉(Xianggelila)”命名。

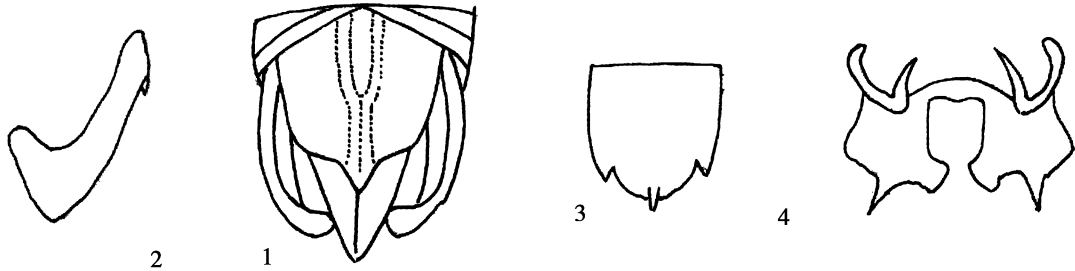


图 1~4 香格里拉拟裸蝗
Figs. 1–4 *Conophymacris xianggelilaensis* sp. nov.

1: 雄性腹端背面 ♂, terminalia, dorsal view; 2: 雄性尾须 ♂, cerca; 3: 雌性下生殖板 ♀, subgenital plate; 4: 阳具基背片 Epiphallus

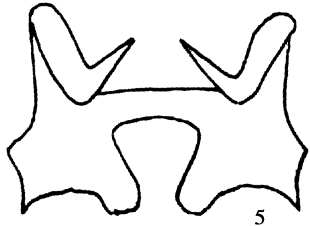


图 5 黑股拟裸蝗的阳具基背片
Fig. 5 Epiphallus of *Conophymacris nigrofemora* Liang

2 九龙拟裸蝗, 新种 *Conophymacris jiulongensis* Zheng et Shi, sp. nov. (图 6~9)

雄性: 体中型, 较粗壮。头顶向前倾斜, 在复眼间的距离大于颜面隆起在触角之间宽的 2 倍; 缺头侧窝; 侧面观, 颜面略倾斜, 与头顶形成钝圆角形, 颜面隆起侧缘近平行, 自触角基部之间向下至中央单眼之下具纵沟, 具粗大刻点。复眼卵圆形, 复眼的纵径为横径的 1.75 倍, 为眼下沟长的 1.75 倍。触角丝状, 超过前胸背板后缘, 中段一节长为宽的 1.75~2 倍。前胸背板前缘平直, 后缘宽弧形, 中央微凹; 中、侧隆线均明显, 侧隆线直, 不弯曲; 后横沟切断中、侧隆线, 沟前区的长度为沟后区长度的 1.5~1.7 倍; 前胸背板侧片后下角圆弧形; 在背板的沟后区密具粗大刻点。前胸腹板突圆锥形; 中胸腹板侧叶间中隔的宽度大于长度; 后胸腹板侧叶分开。前翅鳞片状, 侧置, 在背部不毗连, 翅顶圆形, 到达第 1 腹节背板后缘, 翅长为宽的 1.9 倍; 后翅极小, 不发达。后足股节上侧中隆线平滑, 下膝侧片顶圆形。后足胫节外侧具刺 10 个, 具外端刺, 内侧具刺 11 个。跗节爪间中垫大, 到达爪之顶端。鼓膜器发达。肛上板盾形, 端部三角形突出, 在基部中央具宽纵沟。尾须较长, 向内向上弯曲, 基部较宽, 中部细, 端部呈宽弧形, 后下角呈圆弧形。下生殖板短锥形, 顶较钝。

体褐绿色。触角黄褐色。复眼深褐色。眼后带黑

色。后胸前侧片黄褐色。前翅黑褐色, 臀域黄褐色。后足股节上侧绿色, 外侧上半部绿色, 下半部黄色, 在中部具二黑斑, 膝部黑褐色; 下侧黄绿色, 在下侧内面基部 1/3 红色; 内侧大部黑色, 中部具一个三角形淡黄色斑, 近端部具淡黄色环。后足胫节端 2/3 红色, 基 1/3 黑色, 近基部具一淡黄色环。跗节褐色。

雌性: 体较雄性粗大。触角刚到达前胸背板后缘, 中段一节长为宽的 1.75 倍。前胸背板沟前区的长度为沟后区长度的 1.7 倍。前翅长为宽的 1.25 倍。肛上板三角形, 中央具纵沟, 中部横沟明显。尾须短锥形。产卵瓣较长, 上瓣之长为宽的 4 倍, 上外缘具钝齿。下生殖板后缘具三齿, 中齿较大。

体色同雄性。

体长: ♂ 24 mm; ♀ 31~34 mm

前胸背板长: ♂ 5.5~6 mm; ♀ 6.5~7 mm

前翅长: ♂ 4~4.5 mm; ♀ 4~5 mm

后足股节长: ♂ 12~13 mm; ♀ 14.5~15 mm

正模 ♂, 四川: 九龙(洪坝), 2008-09-23, 石福明采; 副模 11 ♂ 12 ♀, 同正模。

该新种近似于绿拟裸蝗 *Conophymacris viridis* Zheng, 1980, 但雄性前胸背板沟前区侧隆线直; 后足胫节端 2/3 红色, 基 1/3 黑色, 近基部具一淡黄色环; 雌性前翅长为宽的 1.25 倍; 下生殖板后缘具三齿, 中齿较大而区别。

词源: 种名以模式标本产地“九龙(Jiulong)”为名。

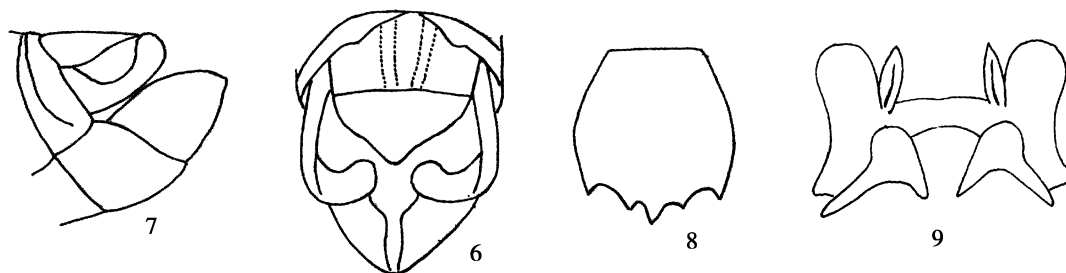


图 6~9 九龙拟裸蝗

Figs. 6-9 *Conophymacris jiulongensis* sp. nov.

6: 雄性腹端背面 ♂, terminalia, dorsal view; 7: 雄性腹端侧面 ♂, terminalia, lateral view; 8: 雌性下生殖板 ♀, subgenital plate; 9: 阳具基背片 Epiphallus.

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Appendix: Brief descriptions of new taxa

Conophymacris xianggelilaensis Niu et Zheng, sp. nov. (Figs. 1–4)

This new species related to *Conophymacris nigrofemora* Liang, 1993, but differs from the latter in: cerci of male folded on lower margin of apex; epiproct in male wider, maximum width longer than the length; epiphallus in different shape.

Length of body: ♂ 19.5 – 25 mm; ♀ 25.5 – 29 mm.

Length of pronotum: ♂ 5.8 – 6 mm; ♀ 6.5 – 7.2 mm.

Length of elytra: ♂ 4 – 5 mm; ♀ 4.5 – 5 mm.

Length of hind femur: ♂ 12 – 13 mm; ♀ 13.5 – 14 mm.

Holotype ♂, Yunnan: Xianggelila (Pushang), 3 000 m, 99° 7' E, 27° 8' N, 13-Sept. -1998, collected by Ou Xiao-Hong and Wu Xiao-Qiang; paratypes 30 ♂ 20 ♀, same data as holotype.

Etymology: The specific name is derived from the type locality Xianggelila, Yunnan Province.

Conophymacris jiulongensis Zheng et Shi, sp. nov. (Figs. 6–9)

This new species is allied to *Conophymacris viridis* Zheng, 1980, but differs from the latter in: lateral keels of pronotum of male straight; apical two thirds of hind tibia red, basal one third black, near basal part with light ring; length of elytra of female 1.25 times its width; hind margin of subgenital plate of female with three teeth, middle one large.

Length of body: ♂ 24 mm; ♀ 31 – 34 mm.

Length of pronotum: ♂ 5.5 – 6 mm; ♀ 6.5 – 7 mm.

Length of elytra: ♂ 4 – 4.5 mm; ♀ 4 – 5 mm.

Length of hind femur: ♂ 12 – 13 mm; ♀ 14.5 – 15 mm.

Holotype ♂, Sichuan: Jiulong (Hongba), 101° 5' E, 29° N, 23-Sept. -2008, collected by Shi Fu-Ming; paratypes 11 ♂ 12 ♀, same data as holotype.

Etymology: The specific name is derived from the type locality Jiulong, Sichuan Province.